Healing is Voltage: The Handbook:
A Special Interview with Jerry Tennant
By Dr. Joseph Mercola

JM: Dr. Joseph Mercola
JT: Dr. Jerry Tennant

JM: We all know that our body runs on bioelectricity, but the devil’s in the details. Wouldn’t you like to know more about that? Hi, this is Dr. Mercola, helping you take control of your health. Today we’re going to be joined by a true pioneer in Natural Medicine, Dr. Jerry Tennant, who wrote the book Healing Is Voltage: The Handbook. He is trained as an ophthalmologist and has a very interesting personal story and journey on how he transitioned into natural health. His health was almost decimated by some challenges he’s encountered and how he was able to turn that around. Welcome and thank you for joining us today.

JT: Thank you very much for having me.

JM: I think many of our viewers would be interested in your personal journey. You’re a board-certified ophthalmologist and focus on treating eye diseases, and still continue doing. In fact, I think why I was really intrigued with some of your work is that you can reverse the most common cause of blindness in the United States, age-related macular degeneration, within a few days, or at least start the process going. We’ll definitely get into that. Why don’t we talk about your journey on how your health got debilitated?

JT: Thank you very much. I always like to begin my talks with a disclaimer that I’m speaking with my Arizona license and not my Texas medical license. If I may take this moment to explain why that is, people have the mistaken idea that if several universities discovered that there’s some new treatment for some illness that doctors can immediately start using that. That’s simply not true.

Physicians, mainly physicians who work for pharmaceutical companies and insurance companies, get together and create rules they call “standard of care.” All physicians are required to practice this so-called standard of care medicine. So, if somebody finds anything that works, physicians can’t do that until enough money is paid to this group. In some states like Texas, our medical boards do not allow Texas physicians to talk about anything that’s not standard of care. Obviously, things I’m going to talk about today aren’t standard of care, so I have to use my Arizona license instead of my Texas license in order to speak freely about this subject.

JM: Is that the homeopathic license?

JT: Yeah. I have an Arizona license by the Board of Integrative and Homeopathic Medicine in Arizona.

JM: Okay. Great.
**JT:** My story actually begins when I started doing the research for the laser that’s used in LASIK surgery. One of the things we didn’t know at that time was that the laser wouldn’t kill viruses.

For example, there was a fellow who came to me from India who had scarring on the front of his corneas. I was using the laser to simply carve those scars off to restore his vision. At the time, we didn’t know that the laser wouldn’t kill viruses. When I carved those scars off, the fact that he had leukemia meant that he had those viruses in his cornea. They came up through my mask, through my nose and into my brain. I developed encephalitis.

I got to where I could see a patient and know what was wrong but I couldn’t remember how to write a prescription. In addition, I developed spastic movements. I would be sitting here and do something like this, which doesn’t work really well if you’re operating inside of somebody’s eyeball. For all of those reasons, I quit working at the end of November 1995. I spent about the next seven years in bed, sleeping 16 hours a day. I went to the best doctors I could find.

**JM:** Excuse me. Prior to this, you were practicing conventional ophthalmology?

**JT:** Yes. I did a lot of cataract surgery, corneal surgery, etc. I was happily being an ophthalmologist, and then all of a sudden, I couldn’t remember how to do it. When I began to get sick, I went to the best doctors I could find in New York, Boston and so forth. They all said, “Well, sorry. You have three viruses in your brain. We don’t know what to do about it. Don’t call us. We’ll call you.”

So, I had two or three hours a day in which I could understand a newspaper. Then like a light switch, it would go off and I couldn’t understand it anymore. During those two or three hours a day I could think, I realized I had to figure out how to get myself well, because no one else was going to do it.

I had the idea that if I could figure out how to make one cell work, I could make them all work, because although they look different, they really all have the same component parts. They just have different software. I began to read cellular biology books, which I hadn’t done for about 30 years.

One of the things that resonated with me is that each of the cellular biology books would have anywhere from a sentence to a page that talked about the fact that cells must run at a pH between 7.35 and 7.45. I didn’t really know what that meant, except something about acid-base balance. I began to try to understand pH. I began to just realize that pH is the name given to voltage in a liquid.

If you think about the voltage that runs these electric lights or this computer that we’re using, that’s called conductive electricity. That means electrons are moving along copper wires. But in a liquid, you have a different situation. A liquid can either be an electron donor or an electron stealer. By convention, if the liquid that you’re interested in is an electron stealer, you put a plus sign in front of the voltage. If it’s an electron donor, you put a minus sign in front of it.
You take a sophisticated volt meter called a pH meter and put it in the liquid. It will actually read out in voltage. Plus 400 millivolts of electron stealer is the same as a pH of zero. Minus 400 millivolts of electron donor is the same thing as pH of 14. Of course if it’s neutral, it’s a pH of 7. Basically, all of these pH meters have a switch. You can either switch it to just read out in pH or to read out in millivolts. Well, it’s obviously much easier to understand if you have it read it out in millivolts, because you really can better understand what’s going on.

If you look at what these cellular biology books all say, a pH of 7.35 is the same thing as -20 millivolts of electron donor. A pH of 7.45 is -25 millivolts of electron donor. Cells are designed to run in an environment at -20 to -25 millivolts. Now, people get confused, particularly physicians, because you read that cells run at -90 millivolts. Well, if you take and put an electrode inside a cell and another electrode outside the cell and read across the cell membrane, then you’ll get a -90. But the environment in which cells must run is -25 millivolts. That was a critical piece of my understanding to begin to understand how to get myself well. The second thing –

JM: Before we go onto the second thing, is this a conclusion you reached by investigating the cellular biology or journals, or were there other investigators or physicians who had come to the similar conclusions?

JT: Well, I hadn’t found people who had come to the same conclusion, although there were many people who talk about the importance of pH in health. But I hadn’t seen anybody who is really talking about voltage. They just said, “Well, you have to fix the pH.”

JM: Okay.

JT: Well, to me, that was a nebulous idea. I mean [if it said] it has something to do about the voltage, then, at least, I could get my hands and my mind around what it meant. But it just said, “Well, fix pH,” or “Eat alkaline foods,” and all that sort of thing. That was sort of nebulous to me. But when I began to get down to the rock bottom that cells require -25 millivolts to work and they require -50 millivolts to repair them when they wear out, all of a sudden, that made a whole lot of difference. To me, that was a different understanding than just saying, “Eat alkaline foods.”

JM: Okay.

JT: The point that I also just included was it became obvious that cells need double the voltage to make new ones that is required to make one run. Healing requires -50 millivolts. The next obvious question was, “Okay. How do I measure it?” Well, it turned out that Dr. Hiroki Nakatani in Japan was the first person to use microelectronics to measure acupuncture meridians. He published his work in 1951. Dr. Reinhard Voll in Germany did similar work and published it in 1952.

I was able to get Dr. Nakatani’s rather rudimentary device and found that my brain was running somewhere between 2 and 4 millivolts, instead of the 25 that it needed to run and the 50 it needed to repair. Now, it was obvious why it didn’t work.
JM: Was this device a Self-Controlled Energo Neuro Adaptive Regulation (SCENAR) device?

JT: No. Nakatani’s device was basically an ohmmeter.

JM: Okay.

JT: Of course, in the ‘50s, we didn’t have really great electronics. But when you get an ohmmeter and measure the circuits, then you can see what the voltage is in those circuits. Now that I began to understand that my brain didn’t have enough voltage to work correctly, then that was really what started me on the journey of trying to figure out how to get things to work again. I can continue this story if you’d like, or you can ask me some questions.

JM: No, I think you can continue, because it really is a fascinating story. But before we continue, I want to insert here that we are going to be lecturing together in Orlando in the first week of November. The first weekend, I think. It’s the first, second or third. It’s somewhere in there. There will be two sets of lectures – one for professionals and then open lectures for the general public, which is most of the viewing audience for this video.

If you have any interest in this topic or any interest in hearing me live, then I would strongly encourage you to attend the Orlando event and even potentially go down to some of the entertainment that is available in Orlando, like Disney World or Universal Studios. We’d welcome your participation. I think you’ll learn a lot not from only myself and Dr. Tennant, but also a number of other phenomenal speakers. There will be a link on this page so that you can see who exactly is speaking and all of those details. Why don’t you continue on with your story?

JT: You know, Joe, you have to wear Mickey Mouse ears at that meeting.

JM: I hope not.

JT: Alright. The reality then is once I discovered that my brain didn’t have enough voltage to work, and then all of a sudden, things began to be more apparent to me about what I had to do to start getting myself well. I ran across some Russian work where Dr. Alexander Karasev had identified the waveform that would transfer electrons to cell membranes. What I didn’t know at the time and [what] I discovered later was that actually it had been already discovered and created in a device called the Lord Baltimore device in 1892. But nevertheless, at that moment, I only knew about the Russian technique.

I was able to acquire a device that had those waveforms in it. I began to treat myself. I began to get better. But one of the things that was critical about my road to getting back to health again was that I met a woman who was a nurse here in the Dallas area, who had lymphoma. She had been treated multiple times with chemotherapy and radiation at MD Anderson. They eventually told her, “Sorry. That’s all we can do. Go home.”
She had gone to Mexico and had met Dr. Bob Vance from Las Vegas, who had treated her. She came back home and she was completely clear from her malignancies. She sent me her pre- and post-treatment records so I could actually read her files from MD Anderson. I decided I would go down and see Dr. Vance and see how in the world they did that. That was really one of the things that began my journey to this understanding of how things really work.

As I began to recognize the fact that the body had to have energy, the other big change in my paradigm was when I finally understood that the body is constantly wearing itself out and having to make new cells. You get new cones in the macula of your eye every 48 hours. It’s the most rapidly changing part of the body. The lining of the gut’s replaced every three days. The skin that you and I are sitting in today is only six weeks old. Your liver’s eight weeks old. Your nervous system’s eight months old, etc.

One of the things I began to realize then is that chronic disease only occurs when you lose the ability to make new cells that work. I think that’s significant enough. I’d like to say it again. Chronic disease only occurs when you lose the ability to make new cells that work. Of course, we’re wearing ourselves out and have to make new cells. Then, of course, we can have injuries or infections or other things that damage cells. We may have to replace those.

JM: Would you go as far to extend that? Not necessarily cells, but the cells’ subcellular components? Like the organelles and the mitochondria, which seems to be even more foundational.

JT: Well, if you say that you must have a cell that works, that cell must contain functional mitochondria.

JM: Yeah.

JT: But the mitochondria are not going to work if the cell membranes don’t work.

JM: Yeah.

JT: I mean it’s the total unit that you have to have working. It’s sort of like you can have a brand new car, but if it doesn’t have a transmission, even though you’ve got the rest of it there, it’s not going to work. You have to have the whole thing.

JM: Yeah. But it you have functioning, really healthy mitochondria, it’s the same strategies that really activate that process. It would actually activate cell health too. They kind of go hand in hand.

JT: Yeah. They do. One of the things that we’ll talk about in a minute is that cells actually have four battery packs. The mitochondria is only one of those battery packs. You’d want them all to be functional.

JM: Okay. We’ll look forward to that.
JT: So, the point is then that if you buy into the paradigm that chronic disease only occurs when you lose the ability to make new cells that work, it leads you to the obvious question, “Well, what does it take to make a new cell work?” Well, what you’ll find is the characteristic of all chronic disease is inadequate voltage. You don’t have the 25 millivolts to run it and/or you don’t have the 50 millivolts to make a new one. But then you also have to look at the things that it takes to make a cell.

Think about if you’re living in Texas and a tornado comes through and blows your house to the ground, and you have to build a new one. You have to have everything it takes to make a house. For example, people often come in with a sack full of nutrients and say, “Are these any good?” I would say, “Yeah. They help make new cells, but you can’t build a new house with doorknobs and bathroom tiles. You need doorknobs and bathroom tiles, but you can’t build a new house with them. You have to have the whole thing.” You have to be sure that you have everything it takes to make a cell. And then you have to deal with whatever toxins that are hanging around.

So, then we go back and begin to look at each of those pieces. Look at the voltage piece. Look at the nutrition piece. Look at the toxin piece. Then we can know how to make a new cell. Well that leads us directly into what is the body’s power pack battery system and wiring system that provides the voltage for everything to work.

Well, it turns out that we have four different battery systems in the body that make cells work. Now, the biggest one and the one that’s often overlooked is the muscle batteries. Our muscles are piezoelectric. What does that funny word mean? If you take a piece of quartz and you squeeze it with a pair of pliers, it emits electrons. So the concept of when you distort something and it causes it to emit electrons is called piezoelectricity.

When I move my muscles, I emit electrons because I’m distorting my muscles. Fortunately while I’m doing that, my muscles are rechargeable batteries. At the same time I’m emitting electrons, I’m storing them. The way the body recharges its muscle battery pack is simply to move and exercise. We are designed to keep our main battery pack charged up.

[CUT 19:00 to 21:17]

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Our muscles are stacked one on top of each other in a very specific order, like batteries in a flashlight to form a power pack. Every organ in the body has its own battery pack, which is a stack of muscle batteries. These batteries are surrounded by fascia. Fascia is that white glistening stuff you see when you carve the Thanksgiving turkey. The interesting thing about fascia is that it’s a semiconductor. What in the world is a semiconductor? Well, a semiconductor is an arrangement of molecules that’s designed to move electrons at the speed of light, but only in one direction.

The stack of muscles is surrounded by a common stocking, if you please, of fascia, which serves as the wiring system for the body. That carries the voltage from the muscle battery inside out to the fascial wire and then it carries it to the appropriate organ.
Again, every organ of the body has its own battery pack. A stack of muscle batteries is what’s been called an acupuncture meridian. An acupuncture meridian is simply a stack of muscle batteries. Well, the muscle battery packs then go through individual teeth. We’ll come back and talk about that, because it’s one of the more important things about understanding chronic disease. But all of these muscle battery packs go through very specific teeth, and then they go to the cells.

Now, our cell membranes are made up of an interesting collection or arrangement of particular fats. These fats are called phospholipids. The thing about a phospholipid is that you have a circle and two legs. The circle is an electron conductor and the legs are insulators. They’re stacked together legs to legs, so that you have two conductors separated by an insulator, which is the definition of a capacitor. A capacitor is simply a small battery.

The difference between a capacitor and a regular battery is when a capacitor discharges, it discharges all of its charge, whereas a battery discharges slowly. Nevertheless, a cell membrane is a small battery. It is continuously fed electrons from the muscle battery packs. Then we get to go inside the cells and we have another rechargeable battery system called adenosine diphosphate/adenosine triphosphate (ADP/ATP). When this battery is charged up, it’s called ATP. When the battery’s discharged, it’s called ADP.

Because it’s a rechargeable battery system, we obviously have to have a battery charger inside of the cell as well. We call that Krebs cycle, or the citric acid cycle. Now, the citric acid cycle likes to run on fatty acids.

For every unit of the fatty acid that you put into the citric acid cycle if oxygen is available, you get enough electrons to charge up 38 of those ATP batteries. But if oxygen is not available, for every unit of fatty acids you put into the citric acid cycle, you only get enough electrons to charge up two of those batteries. When oxygen drops, then that battery system becomes very inefficient. It’s like a car that goes from 38 miles a gallon to 2 miles a gallon.

Then finally you have DNA. Now, most of the time when you see a picture of DNA, you see it from the side. You see it looks like you took a ladder and twisted it. But if you actually look at it from the top, it’s got a hole on the top, right in the center. Each circle of the DNA is what’s called golden mean. If we have time and need to, we can go into that subject. But anytime you have something that’s golden mean and expose it to scalar energy, it will implode into that. Scalar energy implodes into the center and it becomes the power supply for DNA.

We have our muscle battery packs. We have our cell membrane battery pack. We have our ATP battery pack. DNA has its own battery system as well. All of these battery systems are necessary to be functional for the cell to work correctly.

**JM:** I thought there was another energy system, which I understand is structured water. Water having the capacity to extract energy from the sun, specifically in the near-infrared range primarily and store it as energy, and then transfer it to cellular processes. I’m wondering why that’s left out of the equation.
JT: Yeah. Obviously, Gerald Pollack’s work, I think, is what you’re probably quoting, where we have structured water particularly inside the cell membrane that creates another system.

JM: I think intercellular and extracellular. It’s not so much inside the membrane. Those are just fat. Water likes to hang out there too.

JT: Yeah. Inside the cell membrane, we have the reticular formation, which actually is a resistor. It’s wired to the capacitor. The cell membrane and the reticular system form what’s called an impedance resistance (RC) unit, which then interacts with the LC system, or the impedance capacitance system of the rest of the body. But when we start getting into these electronic terms, I find people glaze over. I tend not to talk too much about LC circuits and RC circuits.

JM: Sure. But it’s my understanding, especially the red blood cells, there’s not enough energy that the heart produces when it pumps to transfer those cells through the capillaries. It just doesn’t work, so they have to get their energy from other ways. It’s my understanding that they do that through the structured water system.

JT: Yeah. I think you’re correct about that. Again, up to what level do we carry this conversation forward without losing too many people along the way?

JM: Well, I think it’s essential to what you’re saying too, because part of your strategy is very similar to what I’m suggesting. It’s that we need to engage in activities that charge up our system. One of them is exposing our skin, a sufficient quantity of the surface area of our skin, to the sunshine on a regular basis.

JT: Well, I think you’re correct about that because of particularly what Stephanie Seneff talks about, where nothing really works without cholesterol sulfate. When you eat sulfate and you’re exposed to infrared light, it converts it to cholesterol sulfate. Cholesterol sulfate is attached to high molecular weight sugars, which then get put inside the red blood cells and create a magnetic field or the zeta potential around the red blood cell. And then they’re attached to glycosaminoglycans (GAGs) that go into the endothelium, which creates another magnetic field.

If this is the endothelium lining the inside of your artery and this is a red blood cell going by, it creates a magnetic drag between the two that causes the endothelium to release nitric oxide, which then dilates the arteriole. Again, it’s essential to have that. Plus, as Seneff has pointed out very clearly, essentially all patients with malignancies are deficient in cholesterol sulfate. When they are, even with functional mitochondria, the cell won’t use them, because it makes toxins (peroxynitrites) that are worse than when using the cytoplasm. But I think that’s a whole different story.

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We were beginning to walk along this road about what does it take to make a new cell that works? We kind of said, “Okay. We’ve got to have this voltage piece. Then we have to have the nutrition piece.” Then we may have to deal with the toxins that damage cells as fast as we make them.
When we start looking at low-voltage, which is characteristic of chronic disease, one must ask the question, “Why won’t that battery pack hold a charge?” I think because that’s where you’re going to find the answer on why they got sick.

Well, the first thing you have to think about is thyroid hormone, because the thyroid hormone T3 controls the voltage of every cell membrane. T2 controls the voltage of the mitochondria. You have to have T3 and T2 in order to make things work. What I find is that basic to all chronic diseases is that you have to make sure you get the thyroid piece right, because if you don’t, then nothing else tends to work correctly.

Of course, one of the problems is, first of all, doctors are trained to look at thyroid-stimulating hormone (TSH) and sometimes T4. But TSH and T4 could be normal, but if you don’t have the cofactors that it takes to convert T4 to T3, you’re still hypothyroid at the cell level.

Then the next thing you have to think about is scars. If you have a scar that touches the wire for our muscle battery pack (fascia), it drains off some of the voltage. Scars can be significant. For example, a physician, who you and I both know, had an open-heart surgery with bypass. He came to see me one evening. I wasn’t sure if he was going to get back out of my office. He looked terrible. Of course he had this big scar right down the center here. We simply treated the scar and sent him home with one of my electronic devices. The next day at six, he called me and said, “I want to thank you for seeing me yesterday. I’m actually going back to work in the morning.”

**JM:** How did you treat the scar? With lidocaine or procaine?

**JT:** No. I find that the easiest and most reproducible way to do it is if you use essential oils and then put a magnetic field onto the scar. Of course I have my proprietary device called the Biomodulator/Biotransducer. Just put the Biotransducer over the scar until you can feel the magnetic fields go away. That opens up the scar and now the voltage goes through it. It takes about three minutes and works great. You don’t have to stick anybody with a needle.

The point that I’m making is that scars are and can be significant. But the two most important things that take down voltage in a circuit are dental infections and emotions. Now, it turns out that each and every one of these acupuncture circuits go through very specific teeth. The teeth tend to act like a circuit breaker. If you have an infection in the tooth, then it will lower the voltage and then eventually flip the voltage off in that circuit. Now, every organ that’s powered by that circuit can malfunction.

Also, if you have emotions. Emotions are stored in the body as magnetic fields. If you put a magnetic field into a circuit (meridian) designed to conduct electricity, it simply blocks the flow of electrons. So, what we found is that perhaps one of the most important things that start chronic disease is actually emotions.
One can identify these emotion magnetic fields in a variety of different ways. First of all, work by Eileen McKusick and others have shown that we’re all surrounded by this magnetic field. It goes out about 5 feet. At 5 feet out or so is birth; right up next to the body is today.

Emotions are sort of like listening to an orchestra but one of the instruments in the orchestra is out of tune. You notice that it’s making a really weird sound. You can actually come through that magnetic field around the person with a variety of different things and identify where these magnetic fields are.

For example, one of the things McKusick teaches is that you can take a tuning fork and strike it and you’ll hear it go [humming sound]. As you move it through the field, when it hits one of these areas of emotional distortions, its pitch goes [deeper humming sound]. You can actually hear it.

If you can put a pendulum right where you find it, you’ll see the pendulum spins counterclockwise if there’s an emotional distortion there. It spins clockwise if there isn’t. Or you can use another magnetic field. I can actually feel it with my hand as you go through that space. It’s like you can all of a sudden feel a puff of air up against your hand. Nevertheless, the point is you find these magnetic fields. They are stored primarily in the teeth that affect that circuit.

So, I believe the scenario that happens in this (it is still in the theory form, but I really think this is what happens). You have an emotional event. That distortion gets stored in the tooth in that circuit. That lowers the voltage to the pump that’s inside the tooth that normally pumps fluid from the inside of the tooth into the mouth to keep it from getting decay. As you shut the pump down, eventually you start getting decay. You get a filling, then you get a bigger filling, then you get a crown, then eventually you get a root canal, then eventually you get cancer.

Because what happens is that progressively, over time, you get less and less voltage in that circuit, and as voltage begins to drop significantly below the 25 millivolts, then things don’t run correctly. If you don’t have 50 millivolts, you can’t repair it. What happens now? Now, you get chronic disease. Of course, one of the things we can discuss if we have the time is that what you’ll see is that malignancies occur when the polarity flips when it passes through zero and reaches plus 30 millivolts.

The point then is that you’ll find that when you find the circuit that’s low-voltage, you almost always will find that there’s either emotion and/or infection in the corresponding tooth on that side of the body, in that acupuncture circuit. How do you figure out that, yeah, that seems to be the correct thing? You simply have a person put their thumb and ring finger together and teach them how strong they are. Two fingers.

**JM:** The O-Ring Test.

**JT:** Yes, the O-Ring Test. You can do other tests. You can do any form of kinesiology, but I like this one. You do that, and then take two fingers and put it over the tooth that’s in question and see if they’re still strong. If they go weak, then you know you’ve got a circuit that’s blocked
there. Then, you begin to understand one of the main reasons that that particular circuit no longer can provide the voltage necessary to keep that organ system working.

**JM:** A big part of your strategy is working with a really competent biological dentist who can assist with implementing these strategies.

**JT:** Yes. What I’m finding is there are two different issues. First of all, oftentimes, you will see a person who has a low-voltage circuit and the symptoms to go with it. You measure the circuit and it’s low and find out that that tooth is out.

But for example, one of the things that helped me understand the effects of emotions was that I saw a number of kids under the age of 10 who had symptoms of heart, small intestine and autonomic system, which is wisdom teeth, and yet these haven’t even come in yet. All of their scans and everything are normal. There had to be something else there that was taking the circuit out. What you’ll find then is that if you’re looking for it, you’ll find that they’ve got emotion stored in that circuit. When you go in and erase the emotions, all of a sudden this test goes back to normal and the power supply recharges and their symptoms go away.

**JM:** How do you erase the emotions? With your device?

**JT:** Magnetic fields.

**JM:** Okay.

**JT:** Yes. Because they’re magnetic fields, you can erase them with a stronger magnetic field. I obviously have this device that I developed called the Biomodulator, which has the ability to put out these waveforms that we talked about that will transfer electrons. But it has an attachment that puts out scalar energy as well.

The easiest way to do this and to watch it happen and know when you’ve done it is – Let’s assume that you take a pendulum and you go over the various points – traditionally, they were known as chakra points. You just hold it over that. If the voltage in that circuit is correct, it’ll spin clockwise. If it’s low, it will spin counterclockwise.

For example, let’s say you check this spot, which is the sympathetic nervous system, and you check this spot, which is small intestine, and you check the teeth, which is the autonomic system, heart and small intestine, that leads you directly to the wisdom teeth. You go up the wisdom teeth and you find they fail the O-Ring Test. Now you know you’ve got a problem there.

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What you do is you take a pendulum and you just hold it over the lateral chakra – I call them BioTerminals – then you’ll see it spinning counterclockwise, and then you put the magnetic field from a BioTransducer over the wisdom tooth and just hold it there. Pretty soon, you’ll see that the pendulum quits spinning counterclockwise and start spinning clockwise, and then you know you fixed it. You go through all of the terminals and see that they’re spinning correctly. You check the O-Ring test and it’s gone back to normal, and the patient’s symptoms have gone away.
Let me give you an example. Yesterday, I saw someone who was having significant hip pain. The hip’s on the gallbladder circuit. We checked for gallbladder teeth, which are the eye teeth. She failed the O-Ring Test, but she’s never had anything done to those teeth.

We simply did what I described. The pendulum had a ball with it going counter-clockwise over the gall bladder BioTerminals. We put the magnetic field over them with the Biotransducer until it spun clockwise. We checked her teeth and the treatment had corrected them. That took about 10 minutes. All of the pain in her hip was gone. It’s still gone today. My prediction is it’s now gone for good. It’s a quick and easy way to know when you’ve corrected it.

**JM:** Alright. We don’t have a lot of time left, so I want to make sure we cover some broader issues so people can put this in context. Because a lot of the details are in your book. Some of them aren’t, but yeah. For the most part you review it in *Healing Is Voltage*.

I’m wondering if you’ve personally used these strategies, because you shared your story initially and you were pretty debilitated. I mean you couldn’t practice medicine. How long did it take you to learn this and what was your journey back towards health? Do you believe you’re fully recovered at this point?

**JT:** Well, I’m 77 years old as of June. Despite what my children say, I think my mental faculties are back. I come to work every day, so I think it works, after spending seven years and 16 hours a day in bed to where I work every day.

**JM:** Okay.

**JT:** Obviously, each year that goes by, the neat thing about my job – and I think you’ll agree – with your job – is that people always come in teaching us stuff.

**JM:** Oh gosh. I’m passionate about learning. Absolutely.

**JT:** Yeah. Obviously the way I deal with patients today is different than it was last year. It will be different most likely next year, because people like you keep teaching new things. But the point is that the majority of people who come see me are people who have been sick for 10 to 15 years, and what I find is that this corrects it.

**JM:** So you’re basically doing essentially natural medicine at this point. Are you still doing ophthalmology?

**JT:** Well, you see, the rules I’ve just described to you apply to macular degeneration and apply to glaucoma. Those are the things that I do in ophthalmology. I don’t do general ophthalmology. I just treat macular degeneration and glaucoma.

**JM:** Okay.
**JT:** The interesting thing to know is that the macula is on the stomach meridian. The reason people get macular degeneration is that they lose the 50 millivolts they need to make new cells every 48 hours. As those cells wear out, they can’t get replacements. Guess what? You get macular degeneration. What do you have to do? You have to figure out why the power supply in the stomach meridian doesn’t have the 50 millivolts to keep making new cells. You have to have all the materials it takes to make cells.

By the way, nerve cells are 50 percent cholesterol by weight. It’s almost impossible to reverse macular degeneration of persons on statin drugs, because you obviously need the cholesterol to make new macular cells. The point it that when –

**JM:** And we have 25 percent of Americans over 40 on statin drugs. The elderly – 50, 60 or 70 – The higher you go up, the more likely. So maybe half of them who have macular degeneration are on statins.

**JT:** Yes, which is very sad, isn’t it?

**JM:** No. Sad is a very serious understatement. It’s pathetic. It’s tragic, you know?

**JT:** Yes. Obviously.

**JM:** It’s reprehensible negligence. Or ignorance may be a better term.

**JT:** Absolutely. Then glaucoma is another whole different subject, because it’s on a different power supply. The optic nerve’s on the liver/gallbladder circuit. You know I’ve been in ophthalmology for over 50 years. In the beginning of my ophthalmic career, we never had the terms low-pressure glaucoma. Over time, we started seeing people who had glaucoma-looking visual field loss, but the pressure’s normal, so somebody coined this term “low-pressure glaucoma.”

It has nothing to do with glaucoma at all if you think that the word “glaucoma” means “high pressure in the eye.” The optic nerve replaces itself every eight months if it has the 50 millivolts to do it. What you’ll find in every glaucoma patient is that the polarity in the liver meridian has dropped not only down to zero, but past zero so that it’s an electron stealer instead of an electron donor.

If you’re going to fix glaucoma, you have to address the liver-gallbladder circuit. And then the pressure part of glaucoma is on the sympathetic system, because the sympathetic controls lymphatics. The outflow channel of the eye is part of the lymphatic system, not part of the venous system. To fix glaucoma, you look at both the sympathetic and parasympathetic and figure out why that’s not balanced, and then you fix the liver/gallbladder circuit.

**JM:** For the typical person who comes to you with glaucoma or macular degeneration, which sounds like two of your biggest complaints that people visit you with, what is the typical course? I mean it sounds like you can reverse it relatively rapidly. You’re very consistent with it. What is your success rate and timing on the improvement of those conditions?
JT: Well, the macula is neat because it replaces itself every 48 hours, so you’re going to see within three or four days if you’ve done anything. You can measure that both in measuring their visual acuity and the thickness of the macula. You can measure the optical coherence tomography (OCT) scan, in which you can actually look at anatomical changes etc. Glaucoma’s harder because it takes eight months to replace the optic nerve. It’s takes a longer time before you can see what you’ve done.

In glaucoma, you’re much more likely to stabilize the disease than you are to reverse it. The reason is this: Everything I’ve been talking about is new cells, but a new cell can’t push the scar out of the way. That’s true whether you’re talking about the macula, whether you’re talking about the optic nerve. Once it’s scarred, you’re done.

JM: Even with the essential oils and the Biomodulator? Or you can’t get essential oil back there?

JT: Well, the oils don’t have to go there. When you put oils on the body, it’s the frequency of the oils that go up to the semiconductor or the fascia that has the effect.

JM: Okay.

JT: It’s a frequency effect, not an actual biochemical effect.

JM: Okay.

JT: But the point is that the part that seems to be missing in traditional ophthalmic training that I find is that macular degeneration starts out as the inability to make cells, because you don’t have voltage to do it. But one of the things that you have to understand is the amount of oxygen that will dissolve in a liquid is dictated by the voltage of the liquid.

So, if I take this cup of water and I put a tube in and I start bubbling oxygen into it, the amount of oxygen that will dissolve in the oxygen is dictated by the voltage. If I raise the voltage, more oxygen goes in the solution. If I lower the voltage, the oxygen comes out of the solution. As the voltage in the stomach meridian continues to drop for whatever reason, then you don’t have the 50 millivolts to make new cells. Then as the voltage drops more, the oxygen drops lower in the body. Then you’ll have hypoxia, lack of oxygen.

The body’s going to make new blood vessels trying to bring more oxygen in. We call that neovascularization, of course. As you switch from what we call dry to wet macular degeneration, you’re simply discussing the fact that the macula has become so hypoxic that you got neovascularization. Then those new little blood vessels begin to bleed. When they bleed into the macula, they cause scarring. The traditional approach is you inject a drug that clamps down on those neovascular vessels so they don’t bleed. But you haven’t solved the problem, which is hypoxia.

JM: They will apply laser therapy to block them, right?
JT: Well, years ago, we tried. But we had to be sure to do it out of the way from the macula.

JM: Sure.

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JT: The laser had too many side effects acquired in scarring.

JM: Okay.

JT: But these drugs will shut down the blood vessels so they don’t bleed. But then you’ll have to do it again in six weeks. Every six weeks for the rest of your life? That’s the current therapy. The problem is you’ve got to fix the hypoxia. How do you fix the hypoxia? You’ve got to fix the voltage. That, I think, is the missing link. Raise the voltage in the macula by raising the voltage in the stomach circuit (meridian). Now, the stimulus for neovascularization – the lack of oxygen – is reversed. Thus the neovascularization goes away. That’s how you address macular degeneration.

JM: Thank you for reviewing that. If you could just comment on the success rate and if it’s dependent upon how severe the case is, especially with macular degeneration, which is the most common cause of blindness in the country. I mean it sounds like if there’s significant scarring, your hands are tied and there’s a limit to what you can get improvement. Why don’t you just provide us with your success rates?

JT: Well, if you have dry macular degeneration and generally you don’t have much scarring with that, then in the majority of those, you can get their vision generally back within the reading range. Whereas if they have gotten over into the wet area, then it’s a spectrum between a little bit of scarring to so much scarring that there’s no hope at all. It’s hard to create absolute statistics, particularly when you have a spectrum of things.

The point is that if I see a person that has wet macular degeneration, I very clearly tell them, “Look, our goal isn’t necessarily to make you see better. It’s to try to save what you’ve got now. Because if we can raise the oxygen by raising the voltage and stop the stimulus of neovascularization, then you won’t continue to lose vision.”

JM: Okay.

JT: “But if we don’t, you’ll lose it.”

JM: Yeah. Makes sense. Really good statistics. The majority of people with dry macular degeneration will get better using your techniques. Now, you’re using the Biomodulator as a detection device, a diagnostic tool and a therapeutic tool also. Didn’t you use the SCENAR device prior to developing the Biomodulator?

JT: Yeah. The Russian SCENAR device was developed by a chap named Karasev in Russia. Karasev’s family all got food poisoning. Many of them died. He always felt bad because he
couldn't save them. Eventually, he developed this waveform. He put it in this device called the SCENAR. It was a good device.

When I was sick, I ran across this device. I called Dr. Zulia Valeyeva-Frost, who was a Russian lady pediatrician who had married a Brit named Frost. They live in London. I called her and said, “Hey, I’m interested in your device.” She said, “I’m teaching a course in three days in San Francisco.” I said, “Sign me up.”

I went and started using that device. I had a lot of success with it, but it had some disadvantages. One of which was it took me four hours to teach people how to push the buttons just to get started with it.

I felt that over time, I had figured out better frequency sets than the Russian ones. Then there was a bunch of political and economic things that I won’t go into. But eventually, the people who manufactured that device – there was a parting of ways. I’ve had to work with [them] to extend the technology. We began to do so and that was the development of the Biomodulator. The Biomodulator, when I designed it, I had two particular goals. One is to make it easier to use. Second was to make it a less expensive purchase. So it is.

**JM:** Great.

**JT:** But it puts out the same proximate signals that were put out by the Lord Baltimore device in 1892. The Biomodulator and the SCENAR are pulsed electromagnetic field therapy (PEMF) devices that are microcurrent.

**JM:** Yeah. They’re non-native, but they seem to be healing. It’s not that all PEMF is bad. In the right frequencies and the right dosages, it’s fine. I’m wondering if you’ve ever explored the NES Health Systems, which seem to be a radically improved update from United Kingdom (UK) and Australia? Peter Fraser. He’s the guy who founded it and [preceded] Harry Massey from NES Health. Have you looked at that at all?

**JT:** Well, I knew Mr. Massey 20 years ago. I haven’t spoken with him in 20 years or so. At the time, he was working with these devices that used random number generators. There’s a whole bunch of those – the Quantum Xeroid Consciousness Interface (QXCI), the SCiO, Harry’s device – I forgot what he called it then or what he calls his new one. There are a variety of these.

I’ve torn those apart and looked at what’s in them. Basically, they’re software that drives a random number generator. You take any Excel spreadsheet or database and just list whatever you want – list all the illnesses, list all the minerals, list all the vitamins, whatever. When you hit go, it simply goes in randomly, puts a number beside each of those and it sorts them and says, “This is what your problem is.”

The problem with all of those is you never get the same result twice. They try to explain it in a way saying, “Well, it’s Heisenberg’s Uncertainty Principle.” I think that’s all nonsense. They’re just random number devices. Again, I don’t know what Harry’s current device is, but I know was a random number generator years ago.
JM: Okay. Alright. There actually seems to be quite a bit of scientific support behind that device. A lot of training goes with it too, but it’s a simplified version of the SCENAR. A lot of the SCENAR therapists seem to have switched over to using that one.

But anyway, you’re getting profound improvements with your current strategy. I was impressed with – It sounds somewhat esoteric where you’re measuring with this device and using essential oils. But actually, you integrate a whole solid set of pragmatic recommendations with respect to diet and essential fatty acids, grounding and exercise. It’s the whole combination. It’s just not this magic device.

JT: Exactly. That’s why I spend so much time teaching is that people think, “Well, I can buy this device, take it out of the box, put it here and I’m well.

JM: Yeah.

JT: That’s not the way it works. Again, you have to do everything it takes to make new cells work. Again, basic is the voltage piece. If you don’t do that, then even if you are eating a perfect diet but don’t have voltage in your digestive system, you’re still starving to death. You have to have the voltage. You have to have the nutrition. You have to deal with the toxins. You have to do all of those.

JM: Sure. Now, with respect to improving the macula and fatty acids, do you find that the animal-based omega-3 products are useful? I think you recommend phytoplankton as a source of that, right?

JT: Well, the substances that are basic to health for both sea creatures and us land-based creatures are humic acids. Humic acids are a large collection of various organic acids that are constantly changing, so it’s very difficult for the biochemists to exactly describe what they are, because they’re always changing. But one of those humic acids is called fulvic acid, F-U-L-V-I-C. When you include fulvic acid, you have every known vitamin, every known mineral, every known amino acid, and all balanced by nature.

Now, for the sea creatures, the source of humic is marine phytoplankton. The plankton then provides the necessary humic for all the entire chain of creatures in the ocean. Us land-based creatures are supposed to get it from our food. But that hasn’t worked out because of the way the farmers work.

If you think about a leaf that’s on a tree or on a plant, that leaf has voltage, and thus oxygen. The fungal spores that are on it will be suppressed. But when that leaf dies because it’s wintertime and it falls off, the voltage goes away, thus the oxygen drops. That’s the switch that tells the fungus to wake up.

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Fungus does what fungus is supposed to do. That’s to turn organic material into humic acids. That’s the process that should happen. The farm land gets filled with humic acids. Next time we
plant seeds, then the humic is there to feed the new seeds. They grow and you have the cycle continue.

Unfortunately, the farmers, first of all, use fungicides and pesticides to kill off the fungus. The leaf drops off and doesn’t really decay. Pretty soon the soil becomes depleted in the humic acids. The seeds won’t grow, so the farmer uses fertilizers to make them grow. That plant now is insufficient in humic acids. When we eat it, we’re deficient in humic acids, so it doesn’t work. We lose a critical portion of our vitamin, mineral and amino acids.

Fulvic acid is a primary control of cell membranes because it’s one of the few substances that can be either plus or minus, as it needs to be. Only hydrogen is the other thing that can do that. The important thing is then that we need that, as all living creatures and things do.

Fortunately for us, there are some deposits around the world where decaying organic material was wet long enough not to turn into coal. That can be mined as the humic acids. Those are available to us now as a supplement. When we take that, it provides the things we need. Of course, there’s research coming out now that shows not only does it correct mineral deficiencies, but it begins to help with the way our intestinal cells interlock, etc.

Also, fulvic is a great way to get rid of heavy metals because the fulvic would go inside the cell, grab the metal, pull it out, hand it off to the humic, which then takes it out of the body. Whereas in intravenous (IV) chelation, the chelating materials can only get to extracellular things, because they won’t go inside the cells where almost all the metals reside.

**JM:** Yeah. You’ve got recommendations in your book with specific brands and such. So, I’m wondering too – this is the last question – about astaxanthin, which is one of the most potent antioxidants out there. It’s really the most potent carotenoid. It’s been recommended and used in helping treat and prevent macular degeneration. I’m wondering if you’ve had any experience or comments on that.

**JT:** Well, I think more in terms of electron donors and electron stealers. An antioxidant by definition is an electron donor.

**JM:** An electron donor. Yeah.

**JT:** I like to think of an antioxidant as a charitable organization. It has extra electrons and it’ll give it to anybody who wants them. Whether you use that particular one or a variety of others, I don’t think makes a whole lot of difference. It’s all about the fact that our electrical system is like our bank account. It’s how many deposits of electrons do we make versus how many checks do we write and how much are we spending. That’s just one of the possible electron donors that we can take.

**JM:** I think part of the reason why it’s been noted to work so well is because – like vitamin C – it donates its electron then it’s in its oxidized form and it doesn’t work, whereas astaxanthin has the opportunity to donate a dozen or two dozen times. It’s active a lot longer. It’s more sustainable, plus it penetrates better into the tissues.
JT: Well, again, I’m not saying that there’s anything negative about it. It obviously has many positive things.

JM: Yeah. Right. You’ve got to treat the cause.

JT: What I think people need to do – and it takes a while to do it – is quit thinking in terms of biochemistry and start thinking about electricity.

JM: Or physics.

JT: And physics. Same basic thing. Once you start thinking in terms of electron balance and availability of energy – we call that energy electrons, but that’s another subject – availability of the energy, do you have enough energy to make it work or not?

JM: Okay. We can go on and on for hours and hours. You are a wealth of information. It was a real pleasure to dialogue with you today. I’m looking forward to your presentation in Orlando.

If you’ve enjoyed this conversation with Dr. Tennant, then I would welcome and encourage you to join us in Orlando in November. As I said earlier, we’ll have a link to that event down here, so you’ll be able to connect with both of us and hear a lot of brilliant clinicians down there. They’re going to give you some really practical insights that are not conventional medicine. It’s not what you’ve been told in the media that’s going to fix your problem with just some type of drug or surgery that can truly address the foundational cause of disease. I appreciate your time with us. I look forward to connecting with you personally in Orlando.

JT: Thank you very much. If people are interested on more of this subject, of course I have a series of books called Healing Is Voltage. My clinic is in the Dallas area.

JM: What’s your website for that?


JM: If you’re a person with some of these diseases that Dr. Tennant specializes in, especially the glaucoma and the macular degeneration, it would be advisable to go to Dallas, Texas. Inconvenient, but it’s a major help. [There] are a lot of airlines, so it’s easy to get to. Alright. Thank you very much.

JT: Thank you, Dr. Mercola. Be well.

[END]